SYSTEMATIC STUDIES OF ASTERACEAE MEMBERS OF SOUTH GUJARAT

Abstract

This study focuses on the Asteraceae family, the largest family in Dicots, known for its economic significance as crop, ornamental, and medicinal plants. The research was conducted in South Gujarat, covering various landscapes and diverse habitats, leading to the collection of 70 species from 51 genera and 11 tribes. Additionally, the study identified new species, such as *Thespis thakeri*, and recorded several new genera and species for the region.

The study aimed to resolve taxonomic complexities, especially in tribes like Vernonieae and Inuleae, which pose challenges at the generic and species levels. *Xanthium*, a controversial genus, warrants reconsideration of its taxonomic position within the Asteraceae family, as it exhibits significant differences from the typical characteristics of the Heliantheae tribe. The identification process was supported by detailed morphological, palynological, and cladistic analyses.

A total of 27 distinct pollen types were identified, classified based on symmetry, shape, aperture type, ornamentation, and size. Statistical analysis using the Kruskal-Wallis test revealed significant variation across all measured parameters, underscoring the importance of both qualitative and quantitative traits for classification.

Phylogenetic analysis using Maximum Parsimony provided insights into the evolutionary relationships within the family, highlighting both monophyletic and polyphyletic groups, and suggesting the need for reclassification in certain tribes. The findings offer a deeper understanding of species relationships within the Asteraceae family and emphasize the need for integration of other evidences along with molecular studies to further refine the taxonomy.